

REMARKS

Support for the amendment to claim 1, now the sole dependent claim, can be found in original claim 6 of the parent application as well as on page 8, lines 7-31, page 11, lines 6-8 and page 15, lines 6-8.

All examined claims, 1, 2 and 4-6, were rejected under 35 USC 103(c) over Kashiwa et al. (US 4,668,753).

The essence of the instant invention is a process for producing biaxially stretched polypropylene copolymer films (BOPP films) having a very good balance of stiffness, toughness and transparency, obtained from specified random propylene copolymers. Said random propylene copolymers have a specified comonomer content, comprised in the narrow range of from 0.7 to 1.4% by weight when the comonomer is ethylene and a specified cold-xylene soluble fraction, comprised in the narrow range of from 1.0 to 2.5% by weight and are obtainable by a gas-phase polymerization process carried out in the presence of a well defined class of Ziegler-Natta catalysts supported on inorganic oxides.

The applicant has unexpectedly found that when the Ziegler-Natta catalyst system as now defined in claim 1, is used to produce random propylene copolymers having the combination of comonomer content and xylene soluble fraction selected in claim 1, the obtained copolymers show surprising processability (page 16, lines 16-23 of the application) the copolymer properties as well as the biaxial stretching process conditions of claim 1 lead to BOPP films having excellent stiffness, transparency and barrier properties (page 17, lines 43-47 of the application.)

Kashiwa et al. (U.S. 4,668,753) describes a film-forming propylene copolymer having an ethylene content preferably of from 0.3 to 1.5% by mole (col. 3, lines 31-33), corresponding to 0.2 to 1.0% by weight and a certain range of isotacticity.

The ethylene content of the working examples ranges from 0.3 to 0.9% by mole, corresponding to 0.2 to 0.6% by weight, i.e., outside of the range of 0.7 to 1.4% of the instant claims.

Thus, if anything, the reference *teaches away* from the parameters of applicants' claims. To paraphrase the holding in *In re Baird*, 16 F3d 380, 29 USPQ2d 1550, 1552 (Fed.Cir. 1994), "[The reference] appears to teach away from the selection of [applicants' very narrow percentage range] by focusing on [percentages outside of this range] ...".¹

Moreover, the reference is silent about the cold-xylene solubility of the copolymer. Note that the isotactic values (Iso), referred to by Kashiwa et al., referred to the triads-tacticity (%) structure of the polymer chains (col. 4, lines 6-10) and are not directly related to the copolymer xylene soluble content.

The examiner asserts that even if the cold xylene-soluble fraction is not reported by Kashiwa, it is an inherent property of the copolymers of this prior art, "Because the polymers disclosed in Kashiwa are made by processes using catalyst compositions substantially similar to those disclosed in the instant specification" (page 4, lines 4-5 of the office action). Applicants respectfully disagree with this opinion.

¹ The exact quote: "Knapp appears to teach away from the selection of bisphenol A by focusing on more complex phenols ...".

The copolymers of Kashiwa et al. are produced in solution in the presence of a polymerization catalyst supported on magnesium chloride (see col. 4, lines 45-52, col. 5, lines 34-37 and examples 1-3), while the instant claim 1 requires that the catalyst system is supported on inorganic oxide and the polymerization is carried out in the gas phase.

Moreover, according to the examiner, "At the time of the invention, a skilled artisan would have understood that as the ethylene content of the propylene/ethylene copolymer increases, the isotacticity of the copolymer decreases and the processability of the copolymer with higher ethylene content would be improved because the copolymer is less crystalline" (page 3, 3rd full paragraph of the office action). Applicants respectfully submit that the examiner is victim of an incorrect hindsight reconstruction.

Processability is not merely a function of crystallinity, but is determined by a combination of factors such as molecular weight distribution, randomness of the comonomer distribution along the polymer chain, solubles, low molecular weight etc.

The examiner attention is drawn to examples 2 and 3 of the instant invention having the following properties (see Table 3 2, page 28):

Example	1-Butene content (% wt.)	PI Processability Index
Example 2	0.9	22
Example 3	2.9	20

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In contract to the examiner's expectation, the polymer having a *higher* comonomer amount shows *lower* processability. The same is true for the comparative examples of the instant invention, wherein the homopolymers of Comparative example D and E have higher processability than the copolymers of Comparative Examples A, B and C.

Moreover, the copolymers used in the process of the instant invention, besides having excellent processability are able to give BOPP films having outstanding stiffness, toughness and transparency. (Page 3, lines 1-14)

However, does the cited art suggest to produce by gas-phase polymerization in the presence of an inorganic oxide-supported catalyst, a copolymer having the combination of narrow property ranges (comonomer content and cold-xylene solubility according to claim 1, and to process it through the biaxial stretching process claimed in the present claims, to arrive at BOPP film having excellent stiffness, excellent transparency and barrier properties?

Thus, the prior art lacks the teaching, suggestion or motivation necessary to prepare BOPP utilizing applicants' method. There must be a particular reason or motivation for selecting particular ranges from a broad reference disclosure. See *Freerksen v. Gass*, 21 USPQ2d 2007 (Bd. Pat. App. & Int. 1990), citing *Flynn v. Eardly*, 479 F.2d 1393, 178 USPQ 288 (CCPA 1973); *In re Rushig*, 343 F.2d 965, 145 USPQ 274 (CCPA 1965). *Kashiwa et al.* fails to supply them.

Accordingly, allowance is respectfully solicited.

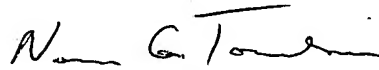
A check for \$930.00 for a three month extension of time is attached. Should this

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be deficient, kindly charge Deposit Account 11-0345.

Respectfully submitted,

KEIL & WEINKAUF

A handwritten signature in dark ink, appearing to read "Norman G. Torchin". The signature is fluid and cursive, with the first name "Norman" and last name "Torchin" clearly distinguishable.

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